FluWatch

Public Health Agency of Canada | Agence de la santé publique du Canada

September 23 to October 6, 2012 (Weeks 39 & 40)

Overall Influenza Summary

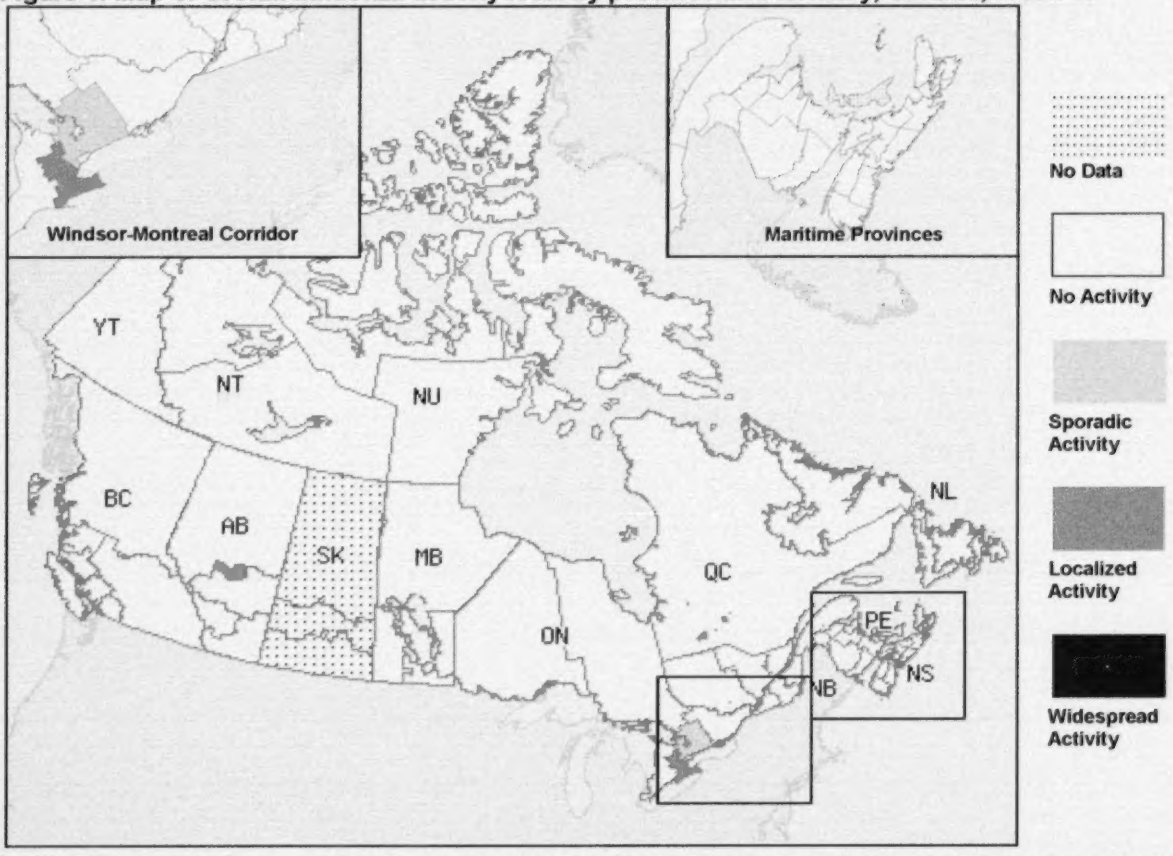
- Influenza activity in Canada remains low but has increased slightly since the last report as two regions (in AB & ON) reported localized influenza activity
- In weeks 39 and 40, a total of 11 laboratory detections of influenza were reported, the majority (92%) of which were for influenza A viruses [5 A(H3), 4 A(H1N1)pdm09, 2 A(un-subtyped) and 1 B]
- Two new influenza outbreaks were reported in week 40: 1 in a LTCF and 1 other
- Three influenza A-associated hospitalizations (in persons ≥65 years of age) were reported over the two-week period
- The ILI consultation rate increased slightly in week 40 to 18.6 per 1,000 patient visits but remains within the expected level for this time of year

NOTE: Weekly FluWatch reporting will start on October 19, 2012 and will continue until May 2013.

Influenza Activity (geographic spread) and Outbreaks

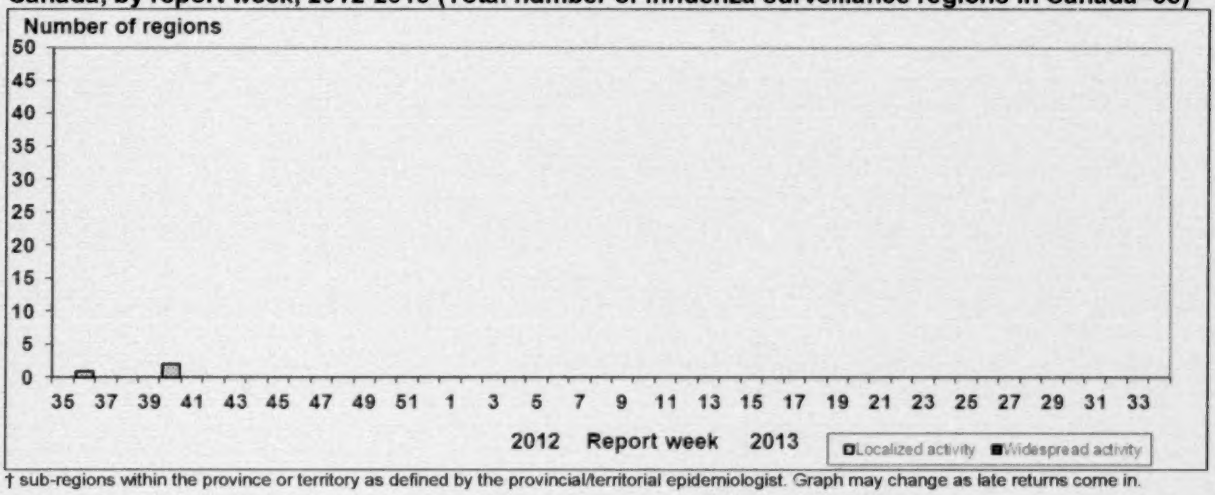
In week 39, 2 regions (within BC & ON) reported sporadic activity while the rest reported no activity. In week 40, 2 regions (within AB & ON) reported localized activity, 1 region (within ON) reported sporadic activity and the rest reported no activity (see Figure 1). Note that data was not received from AB & SK for week 39 and from SK & PEI for week 40. Two new influenza outbreaks were reported in week 40: 1 in a long-term care facility (LCTF) and 1 other type of facility (Figure 3).

Figure 1. Map of overall Influenza activity level by province and territory, Canada, Week 40



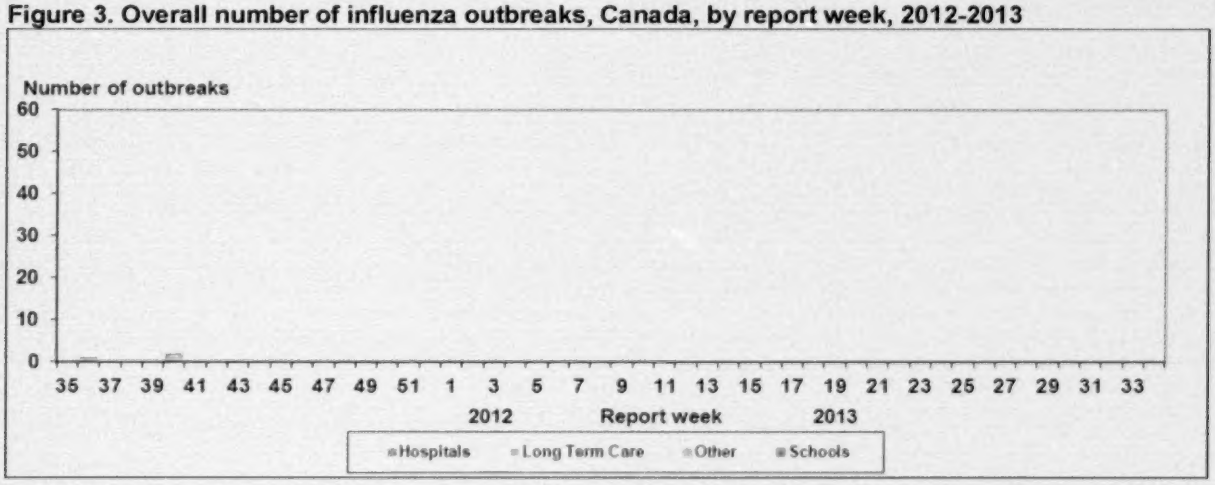
Note: Influenza activity levels, as represented on this map, are assigned and reported by Provincial and Territorial Ministries of Health, based on laboratory confirmations, sentinel ILI rates (see graphs and tables) and reported outbreaks. Please refer to detailed definitions on the last page. For areas where no data is reported, late reports from these provinces and territories will appear on the FluWatch website.

Figure 2. Number of influenza surveillance regions† reporting widespread or localized influenza activity, Canada, by report week, 2012-2013 (Total number of influenza surveillance regions in Canada=58)



† sub-regions within the province or territory as defined by the provincial/territorial epidemiologist. Graph may change as late returns come in.

Figure 3. Overall number of influenza outbreaks, Canada, by report week, 2012-2013



Influenza and Other Respiratory Virus Detections

The percentage of positive influenza tests was 0.3% in week 39 and 0.4% in week 40 (Figures 4 and 5) and is similar to the percentage observed in week 38 (0.3%). Of the influenza viruses detected over the two week period (n=12), 92% were positive for influenza A viruses (of which 45% were A(H3), 36% were A(H1N1)pdm09 and 18% were A unsubtyped) and 8% were influenza B viruses (Table 1).

Cumulative influenza virus detections by type/subtype to date are as follows: 89.5% influenza A (47.1% - A(H3), 14.7% - A(H1N1)pdm09 and 38.2% - unsubtyped) and 10.5% influenza B (Table 1).

Detailed information on age and type/subtype of the positive influenza cases to date will be presented once more information becomes available (Table 2).

The percentage positive for rhinovirus detections increased over the two week period (31.5% & 32.8% in weeks 39 & 40 respectively) and remains the highest compared to the other respiratory viruses. The percentage positive for the other respiratory viruses in week 40 remained low: RSV-1.8%; parainfluenza-3.1%; adenovirus-1.1%; hMPV-0.3%; and coronavirus-0.3% (Figure 5). For more details, see the weekly Respiratory Virus Detections in Canada Report.

Table 1. Weekly & Cumulative numbers of positive influenza specimens by Provincial Laboratories, Canada, 2012-2013

Reporting provinces	September 23 to October 6, 2012						Cumulative (August 26, 2012 to October 6, 2012)					
	Influenza A					B	Influenza A					B
	A Total	A(H1)	A(H3)	Pand H1N1	A (UnS)*	Total	A Total	A(H1)	A(H3)	Pand H1N1	A (UnS)*	Total
BC	1	0	1	0	0	0	4	0	3	0	1	0
AB	5	0	1	4	0	0	8	0	2	5	1	1
SK	0	0	0	0	0	0	1	0	0	0	1	1
MB	0	0	0	0	0	0	3	0	3	0	0	0
ON	5	0	3	0	2	1	14	0	7	0	7	1
QC	0	0	0	0	0	0	2	0	0	0	2	1
NB	0	0	0	0	0	0	0	0	0	0	0	0
NS	0	0	0	0	0	0	0	0	0	0	0	0
PE	0	0	0	0	0	0	0	0	0	0	0	0
NL	0	0	0	0	0	0	2	0	1	0	1	0
Canada	**11**	**0**	**5**	**4**	**2**	**1**	**34**	**0**	**16**	**5**	**13**	**4**

*Unsubtyped: The specimen was typed as influenza A, but no test for subtyping was performed. Specimens from NT, YT, and NU are sent to reference laboratories in other provinces. Note: Weekly data is based on week of positive lab detection. Cumulative data includes updates to previous weeks; due to reporting delays, the sum of weekly report totals do not add up to cumulative totals.

Table 2. Weekly & Cumulative numbers of positive influenza specimens by age groups reported through case-based laboratory reporting, Canada, 2012-2013*

Age groups	Weekly (September 23 to October 6, 2012)					Cumulative (Aug. 26, 2012 to October 6, 2012)				
	Influenza A				B	Influenza A				B
	A Total	Pandemic H1N1	A/H3N2	A unsubtyped	Total	A Total	Pandemic H1N1	A/H3N2	A unsubtyped	Total
<5	-	-	-	-	-	-	-	-	-	-
5-19	-	-	-	-	-	-	-	-	-	-
20-44	-	-	-	-	-	-	-	-	-	-
45-64	-	-	-	-	-	-	-	-	-	-
65+	-	-	-	-	-	-	-	-	-	-
Unknown	-	-	-	-	-	-	-	-	-	-
Total	-	-	-	-	-	-	-	-	-	-

*Please note that the table will be populated once more data becomes available.

Figure 4. Influenza tests reported and percentage of tests positive, Canada, by report week, 2012-2013

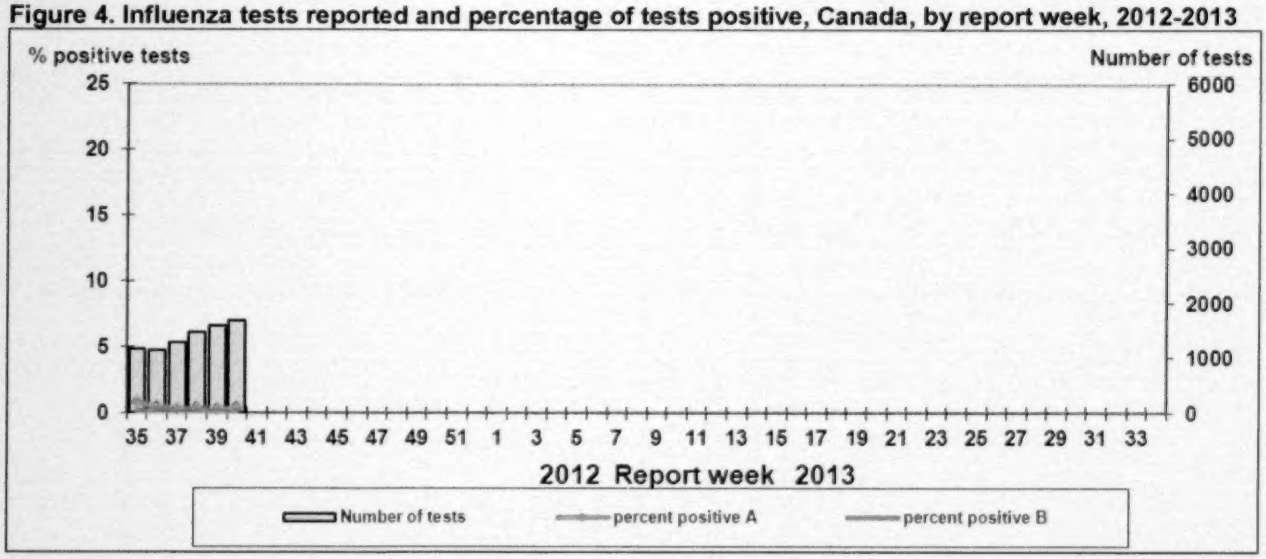
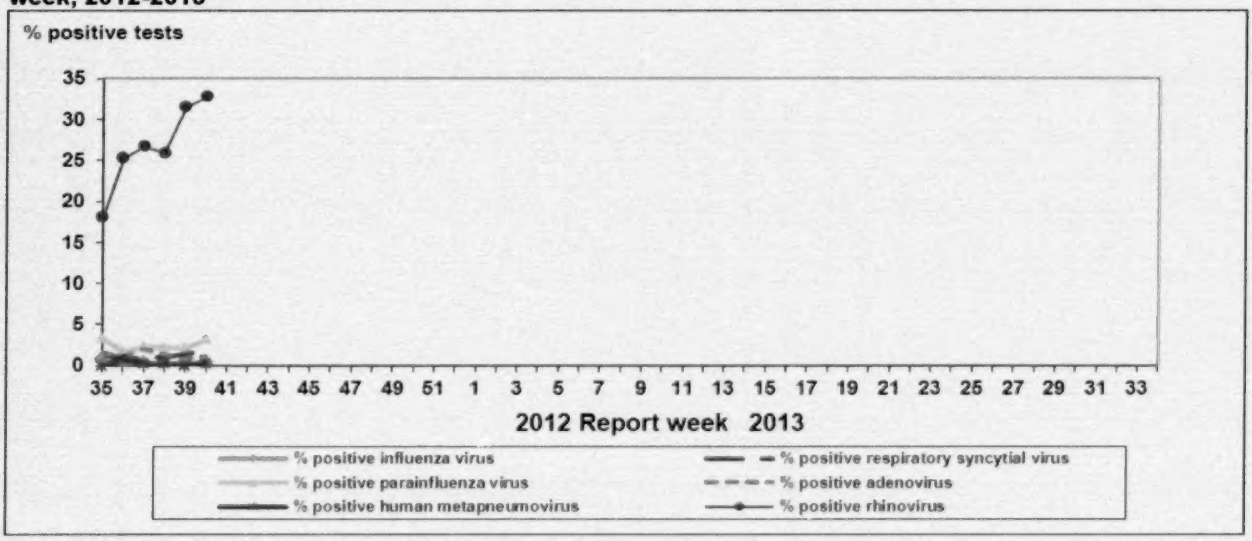


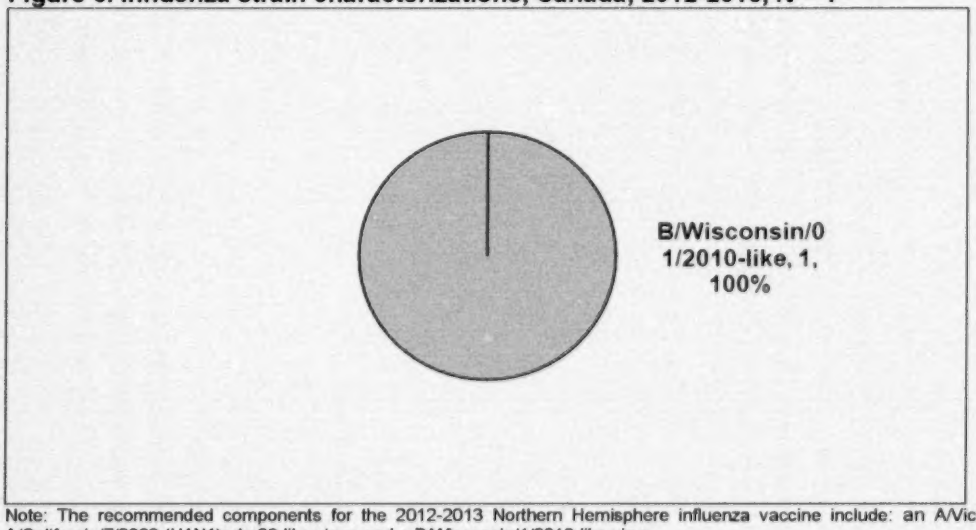
Figure 5. Percent positive influenza tests, compared to other respiratory viruses, Canada, by reporting week, 2012-2013



Influenza Strain Characterizations

Since the start of the 2012-2013 influenza season, the National Microbiology Laboratory (NML) has antigenically characterized 1 influenza B virus; the virus was antigenically similar to the vaccine strain B/Wisconsin/01/2010 (Yamagata lineage).

Figure 6. Influenza strain characterizations, Canada, 2012-2013, N = 1



Note: The recommended components for the 2012-2013 Northern Hemisphere influenza vaccine include: an A/Victoria/361/2011 (H3N2)-like virus; an A/California/7/2009 (H1N1)pdm09-like virus; and a B/Wisconsin/1/2010-like virus.

Antiviral Resistance

Since the beginning of the season, NML has tested 1 influenza virus for resistance to oseltamivir and 1 for zanamivir and it was found that the virus tested was sensitive to oseltamivir and zanamivir. A total of 3 influenza A(H3N2) viruses were tested for amantadine resistance and all 3 viruses tested were resistant (Table 3).

Table 3. Antiviral resistance by influenza virus type and subtype, Canada, 2012-2013

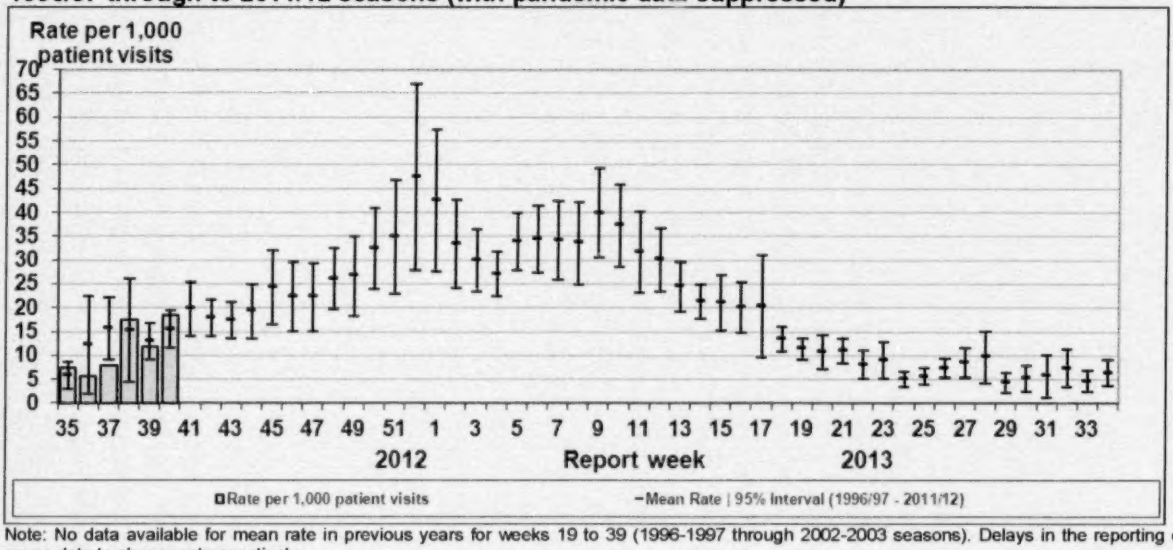
Virus type and subtype	Oseltamivir		Zanamivir		Amantadine	
	# tested	# resistant (%)	# tested	# resistant (%)	# tested	# resistant (%)
A (H3N2)	0	0	0	0	3	3 (100%)
A (H1N1)	0	0	0	0	0	0
B	1	0	1	0	NA*	NA*
TOTAL	1	0	1	0	3	3 (100%)

* NA – not applicable

Influenza-like Illness Consultation Rate

The national influenza-like-illness (ILI) consultation rate for week 39 was 11.8 ILI consultations per 1,000 patient visits and in week 40 was 18.6/1,000; both were within expected levels for this time of year (Figure 7). The highest consultation rates in week 40 were observed in those <5 years of age (49.3/1,000) and those ≥65 years of age (35.5/1,000).

Figure 7. Influenza-like illness (ILI) consultation rates, Canada, by report week, 2012-2013 compared to 1996/97 through to 2011/12 seasons (with pandemic data suppressed)



Note: No data available for mean rate in previous years for weeks 19 to 39 (1996-1997 through 2002-2003 seasons). Delays in the reporting of data may cause data to change retrospectively.

Severe Respiratory Illness Surveillance

Paediatric Influenza Hospitalizations and Deaths (IMPACT)

No laboratory-confirmed influenza-associated paediatric (16 years of age and under) hospitalizations have been reported by the Immunization Monitoring Program Active (IMPACT) network since the start of the 2012-2013 influenza season.

Influenza Hospitalizations and Deaths (Aggregate Surveillance System)
In weeks 39 and 40, 3 laboratory-confirmed influenza A-associated hospitalizations were reported (from AB & ON). All cases were ≥65 years of age.

To date this season, 4 influenza A-associated hospitalizations have been reported from 3 provinces (AB, ON & NL); all were ≥ 65 years of age. Of the influenza A hospitalizations where subtype was available (2), all were due to influenza A(H1N1)pdm09. There has been 1 hospitalisation for which admission to ICU was required (from NL). To date this season, no influenza-associated deaths have been reported.

Note: Influenza-associated hospitalizations are not reported to PHAC by the following Provinces: BC, NU, QC, NS, & NB. Only hospitalizations that require intensive medical care are reported by SK. ICU admissions are not reported in ON.

International Influenza Updates

WHO: Influenza transmission in all reporting countries in the temperate regions of the northern hemisphere is still minimal and is at inter-seasonal levels. In the tropical areas most countries are reporting low or decreasing trends of influenza virus detections. The exceptions are Costa Rica in the Americas and India; Nepal, Lao PDR and Thailand in Asia. In Sub-Saharan Africa, Cameroon has reported an increase in influenza virus detections. It appears that the influenza season in the temperate countries of the southern hemisphere has come to an end.
World Health Organization influenza update

United States: The proportion of tests positive for influenza viruses increased slightly in week 39 (3.6%) compared to previous weeks (3.1% in week 38 and 2.7% in week 37). Of the positive influenza detections reported during week 39, 55% were positive for influenza B viruses. Of the 20 influenza A viruses for which subtype information was available, 85% were A(H3) and 15% were A(H1N1)pdm09. All other indicators of influenza activity remained low. *Centers for Disease Control and Prevention seasonal influenza report*

Europe: In week 40, influenza activity in the European Region remained low. None of the 282 samples collected from sentinel sources were positive for influenza virus; 15 samples from non-sentinel sources were positive for influenza viruses (4 influenza A(H1N1)pdm09, 1 influenza A(H3N2), 6 un-subtyped and 4 influenza B). ILI and ARI consultation rates are at low levels, which is usual for this time of year.
EuroFlu weekly electronic bulletin

Human Avian and Swine Influenza Updates

H5N1
No cases of human avian influenza A/H5N1 infection have been reported by the WHO since August 10, 2012. A summary of the latest WHO Human-Animal Interface Risk Assessment (as of October 1, 2012) is available on the WHO webpage.
WHO Avian influenza situation updates

H1N1 variant (H1N1v)
In week 38, a case of human infection with influenza A(H1N1) variant (H1N1v) virus was reported in Ontario, Canada. The case was an adult male with underlying risk factors who developed symptoms at the end of August and was hospitalized with pneumonia in September. He had occupational exposure to swine. No additional cases have been reported. This is the first time that an H1N1v virus has been detected in Canada with the matrix (M) gene from the influenza A(H1N1)pdm09 virus. Based on its similarity to the H1N1 virus that has circulated in humans since 2009, it is expected that the 2012-2013 seasonal influenza vaccine is likely to protect against the H1N1v influenza virus, although the seasonal influenza vaccine may not protect people against some other variant influenza viruses that are very different from currently circulating human influenza viruses.

FluWatch reports include data and information from the following sources: laboratory reports of positive influenza tests in Canada (National Microbiology Laboratory), sentinel physician reporting of influenza-like illness (ILI), provincial/territorial assessment of influenza activity based on various indicators, including laboratory surveillance, ILI reporting, and outbreaks, influenza-associated paediatric and adult hospitalizations, antiviral sales in Canada, and WHO and other international reports of influenza activity.

Abbreviations: Newfoundland/Labrador (NL), Prince Edward Island (PE), New Brunswick (NB), Nova Scotia (NS), Quebec (QC), Ontario (ON), Manitoba (MB), Saskatchewan (SK), Alberta (AB), British Columbia (BC), Yukon (YT), Northwest Territories (NT), Nunavut (NU).

ILI definition for the 2012-2013 season

ILI in the general population: Acute onset of respiratory illness with fever and cough and with one or more of the following - sore throat, arthralgia, myalgia, or prostration which is likely due to influenza. In children under 5, gastrointestinal symptoms may also be present. In patients under 5 or 65 and older, fever may not be prominent.

Definitions of ILI/Influenza outbreaks for the 2012-2013 season

Schools: Greater than 10% absenteeism (or absenteeism that is higher (e.g. >5-10%) than expected level as determined by school or public health authority) which is likely due to ILI. Note: it is recommended that ILI school outbreaks be laboratory confirmed at the beginning of influenza season as it may be the first indication of community transmission in an area.

Hospitals and residential institutions: two or more cases of ILI within a seven-day period, including at least one laboratory confirmed case. Institutional outbreaks should be reported within 24 hours of identification. Residential institutions include but not limited to long-term care facilities (LTCF) and prisons.

Workplace: Greater than 10% absenteeism on any day which is most likely due to ILI.

Other settings: two or more cases of ILI within a seven-day period, including at least one laboratory confirmed case; i.e. closed communities.

Influenza Activity Levels Definition for the 2012-2013 season

Influenza Regional Activity levels are defined as:

1 = No activity: no laboratory-confirmed influenza detections in the reporting week, however, sporadically occurring ILI may be reported

2 = Sporadic: sporadically occurring ILI and lab confirmed influenza detection(s) with **no outbreaks** detected within the influenza surveillance region†

3 = Localized: (1) evidence of increased ILI* and
(2) lab confirmed influenza detection(s) together with
(3) **outbreaks** in schools, hospitals, residential institutions and/or other types of facilities occurring in **less than 50% of the influenza surveillance region**†

4 = Widespread: (1) evidence of increased ILI* and
(2) lab confirmed influenza detection(s) together with
(3) **outbreaks** in schools, hospitals, residential institutions and/or other types of facilities occurring **in greater than or equal to 50% of the influenza surveillance region**†

Note: ILI data may be reported through sentinel physicians, emergency room visits or health line telephone calls.

* More than just sporadic as determined by the provincial/territorial epidemiologist.

† Influenza surveillance regions within the province or territory as defined by the provincial/territorial epidemiologist.

We would like to thank all the Fluwatch surveillance partners who are participating in this year's influenza surveillance program.

This report is available on the Public Health Agency website at the following address: http://www.phac-aspc.gc.ca/fluwatch/index.html. Ce rapport est disponible dans les deux langues officielles.